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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/776,173 | 02/12/2004 | Tadashi Sawayama | 03500.013470.1 | 3762 |
| 5514 | 7590 | 01/03/2006 | EXAMINER | |
| FITZPATRICK CELLA HARPER & SCINTO | | | KACKAR, RAM N | |
| 30 ROCKEFELLER PLAZA | | | ART UNIT | |
| NEW YORK, NY 10112 | | | PAPER NUMBER | |
| | | | 1763 | |
| DATE MAILED: 01/03/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/776,173 | SAWAYAMA ET AL. | |
| | Examiner | Art Unit | |
| | Ram N. Kackar | 1763 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 28-34 and 39-44 is/are pending in the application.
- 4a) Of the above claim(s) 28-34 and 39-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. 09/294,367.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 1-11 in the reply filed on 11/21/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 3, 5, 6, 8 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikeda et al (US 5819683).**

Ikeda et al disclose a process of treatment of exhaust gas (Abstract), which contains unaffected gas, and by products from a vacuum processing apparatus for CVD or etch (Col 1 lines 10-20) by a trap, which contains heated filament (coil) in the path of the exhaust gas.

Ikeda et al further teach that the trap could be of any configuration provided it can produce heat such as tungsten (Col 8 lines 12-20). Further Ikeda et al disclose the trap to comprise a double wall structure for cooling purpose.

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Regarding temperature it is noted that the temperature is specific to decomposition of a particular gas and is therefore result effective parameter and could be optimized. However in a certain case temperature of 500 C is disclosed (Col 1 line55-58).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (US 5819683).**

As discussed above, Ikeda et al disclose a process of treatment of exhaust gas (Abstract), which contains unaffected gas, and by products from a vacuum processing apparatus for CVD or etch (Col 1 lines 10-20) by a trap, which contains heated filament (coil) in the path of the exhaust gas. Further temperature is specific to decomposition of a particular gas and is therefore result effective parameter and could be optimized.

6. **Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (US 5819683) in view of Pang et al (US 6194628).**

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Ikeda et al disclose a process of treatment of exhaust gas (Abstract), which contains unaffected gas, and by products from a vacuum processing apparatus for CVD or etch (Col 1 lines 10-20) by a trap, which contains heated filament (coil) in the path of the exhaust gas. Ikeda et al do not disclose the vacuum processing apparatus to be a plasma CVD apparatus.

Since the process of exhaust gas treatment depends only upon the gas and not where it came from the disclosed process of Ikeda et al read on the claim.

However, Pang et al disclose treatment of exhaust gas from a vacuum processing apparatus for Plasma CVD (Abstract, Fig 2 and Fig 3).

Therefore using the exhaust gas treatment for an apparatus with plasma CVD would have been obvious for one of ordinary skill in the art at the time of invention.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (US 5819683) in view of Shingo Murakami (US 4901668).

Ikeda et al disclose a process of treatment of exhaust gas (Abstract), which contains unaffected gas, and by products from a vacuum processing apparatus for CVD or etch (Col 1 lines 10-20) by a trap, which contains heated filament (coil) in the path of the exhaust gas.

Ikeda et al do not disclose the vacuum processing apparatus to be a photo CVD apparatus.

Since the process of exhaust gas treatment depends only upon the gas and not where it came from the disclosed process of Ikeda et al read on the claim.

However, Murakami discloses treatment of exhaust gas from a vacuum processing apparatus for photo CVD (Abstract and Fig 1).

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Therefore using the exhaust gas treatment for an apparatus with photo CVD would have been obvious for one of ordinary skill in the art at the time of invention.

8. Claim 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (US 5819683) in view of Yoshikazu Kikuchi (JP 63200820).

Ikeda et al disclose a process of treatment of exhaust gas (Abstract), which contains unaffected gas, and by products from a vacuum processing apparatus for CVD or etch (Col 1 lines 10-20) by a trap, which contains heated filament (coil) in the path of the exhaust gas.

Ikeda et al do not disclose the vacuum processing process to comprise silicon.

Yoshikazu Kikuchi discloses an exhaust treatment process treating silicon-containing gas to trap material like SiO₂ (Abstract).

Therefore using the exhaust gas treatment for a silicon containing gas would have been obvious for one of ordinary skill in the art at the time of invention.

9. Claims 1- 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry et al (US 4746500) in view of LePetitcorps (US 5571561).

Parry et al disclose a process of treatment of exhaust gas (Abstract), which contains unaffected gas, and by products from a vacuum processing apparatus (Abstract) by a trap, which contains heated filament (coil) in the path of the exhaust gas (Fig 1 and 2).

Parry et al do not disclose the filament to contain tungsten.

However tungsten has been known as a material of heating filaments for a long time.

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LePetitcorps discloses a CVD apparatus where a filament containing tungsten is heated to deposit a material on the filament (Abstract and Fig 1).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to use tungsten in the filament of Parry et al in order to heat the filament for trapping action.

Regarding temperature it is noted that the temperature is specific to decomposition of a particular gas and is therefore result effective parameter and could be optimized. However in a certain case temperature above 1000 C is disclosed (Parry et al - Col 2 line 30-35).

Conclusion


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Exhaust gas treatment using hot trap is further disclosed by Atsuji Matsuwaka (JP 60001827).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar
Primary Examiner AU 1763